

## Trane OEM SEN00297

# Trane OEM Flame Sensor Instruction Manual

Model: SEN00297

## 1. PRODUCT OVERVIEW

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The Trane OEM Flame Sensor, model SEN00297, is a critical safety component designed for use in various Trane and American Standard heating systems. Its primary function is to detect the presence of a flame in the combustion chamber. If a flame is not detected when expected, the sensor signals the control board to shut down the gas supply, preventing the accumulation of unburnt gas and ensuring safe operation. This component is an original equipment manufacturer (OEM) part, ensuring compatibility and reliable performance with specified Trane and American Standard units.

This sensor replaces and supersedes models SEN-0297, SEN0297, and SEN297.

## 2. IMPORTANT SAFETY INFORMATION

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- **Professional Installation Recommended:** Installation and servicing of heating system components should only be performed by qualified, certified HVAC technicians. Improper installation can lead to property damage, serious injury, or death.
- **Disconnect Power:** Always ensure that all electrical power to the heating unit is disconnected at the main service panel before attempting any installation, maintenance, or troubleshooting. Failure to do so can result in electrical shock.
- **Gas Supply:** If working near gas lines, ensure the gas supply is turned off.
- **Personal Protective Equipment:** Wear appropriate personal protective equipment (PPE), such as gloves and eye protection, during installation and maintenance.
- **Consult Appliance Manual:** Always refer to the specific installation and service manual for your heating appliance for detailed instructions and safety precautions.

## 3. INSTALLATION INSTRUCTIONS

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This section provides general guidance for replacing a flame sensor. Always consult your specific furnace or boiler manual for exact procedures and safety warnings.

1. **Power Disconnection:** Turn off all electrical power to the heating unit at the circuit breaker or fuse box. Verify power is off using a voltage tester.
2. **Locate Existing Sensor:** Open the furnace access panel and locate the existing flame sensor. It is typically a thin metal rod positioned in the path of the burner flame, often near the igniter.
3. **Disconnect Wiring:** Carefully disconnect the wire connected to the existing flame sensor.
4. **Remove Old Sensor:** Using an appropriate wrench or screwdriver, remove the screw or nut holding the old flame sensor in place. Gently pull the sensor out.
5. **Inspect New Sensor:** Before installation, visually inspect the new Trane OEM Flame Sensor (SEN00297) for any damage.
6. **Install New Sensor:** Insert the new flame sensor into the mounting bracket, ensuring it is positioned correctly to detect the flame. Secure it with the screw or nut, tightening it appropriately but not overtightening.
7. **Connect Wiring:** Reconnect the wire to the new flame sensor. Ensure a secure connection.
8. **Close Panel & Restore Power:** Close the furnace access panel. Restore electrical power to the heating unit.
9. **Test Operation:** Initiate a heating cycle to verify proper operation. The furnace should ignite and run without fault codes related to flame sensing.



Figure 1: Front view of the Trane OEM Flame Sensor (SEN00297). This image shows the ceramic insulator, the metal rod, and the mounting bracket.



Figure 2: Angled view of the Trane OEM Flame Sensor (SEN00297), highlighting the L-shaped sensing rod and the electrical connection point.

## 4. OPERATING PRINCIPLE

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The Trane OEM Flame Sensor operates on the principle of flame rectification. When the burner ignites, the flame creates a conductive path for a small electrical current (microamps) to flow through the flame sensor rod to the ground. The furnace's control board monitors this current. If the control board detects the presence of this current, it confirms the flame is established and allows the heating cycle to continue. If the current is not detected within a specified timeframe after ignition, or if it is lost during operation, the control board will initiate a safety shutdown, preventing gas flow and potential hazards.

## 5. MAINTENANCE

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Regular maintenance of your flame sensor is crucial for the safe and efficient operation of your heating system. A dirty flame sensor is a common cause of furnace malfunctions.

- **Annual Inspection and Cleaning:** It is recommended to have the flame sensor inspected and cleaned annually by a qualified HVAC technician, typically as part of routine furnace maintenance.
- **Cleaning Procedure (by qualified personnel only):**
  - a. Ensure power to the unit is completely off.
  - b. Carefully remove the flame sensor as described in the installation section.
  - c. Gently clean the ceramic insulator and the metal rod with fine-grit sandpaper or a Scotch-Brite pad. Do not use steel wool or abrasive cleaners that can leave residue. The goal is to remove any carbon buildup or oxidation.
  - d. Wipe the sensor clean with a dry cloth.
  - e. Reinstall the sensor and restore power.
- **Replacement:** If the sensor appears corroded, cracked, or if cleaning does not resolve flame sensing issues, the sensor may need to be replaced.

## 6. TROUBLESHOOTING COMMON ISSUES

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If your heating system is experiencing issues related to flame detection, consider the following troubleshooting steps. Always ensure power is disconnected before inspecting components.

- **Furnace Not Igniting or Short Cycling:**
  - **Symptom:** Burners ignite briefly and then shut off, or fail to ignite at all, often followed by a lockout or error code.
  - **Possible Cause:** Dirty or faulty flame sensor. Carbon buildup on the sensor prevents it from detecting the flame current.
  - **Action:** Clean the flame sensor as described in the Maintenance section. If the issue persists, the sensor may need replacement.
- **No Heat:**
  - **Symptom:** The furnace attempts to start, but no flame is established, or the flame is not detected, leading to a complete shutdown.
  - **Possible Cause:** Beyond a dirty flame sensor, this could indicate issues with the igniter, gas supply, or control board.
  - **Action:** While cleaning the flame sensor is a good first step, if the problem continues, it is advisable to contact a qualified HVAC technician for a comprehensive diagnosis.

*Note: Many furnace issues can mimic flame sensor problems. If troubleshooting steps do not resolve the issue, professional diagnosis is essential.*

## 7. PRODUCT SPECIFICATIONS

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Specification	Detail
Brand	Trane OEM
Model Number	SEN00297 (Replaces SEN-0297, SEN0297, SEN297)
Type	Flame Sensor
Material	Metal, Ceramic
Measuring Range	ON - OFF (Flame Detection)
Item Weight	Approximately 1 Pound (16 ounces)

## 8. WARRANTY AND SUPPORT

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As an Original Equipment Manufacturer (OEM) component, the Trane OEM Flame Sensor (SEN00297) comes with a factory warranty. Specific warranty terms and duration may vary. Please refer to the warranty documentation provided with your heating appliance or contact Trane OEM directly for detailed warranty information.

For technical support, service, or warranty claims, it is recommended to contact a certified Trane or American Standard HVAC technician or the official Trane OEM customer service. Attempting repairs or modifications without proper authorization may void your warranty.



Figure 3: Illustration of the Trane OEM Component stamp, signifying genuine parts.